

CLAIMS

1. A chip resistor having a low resistance characterized in that a recess is provided in a portion at each of left and right ends in a lower surface of a resistor element composed of a metal plate, the recesses each being provided with a connection terminal electrode made of metal of lower resistance than the resistor element, at least a portion between the connection terminal electrodes in the lower surface of the resistor element being covered with an insulator.

2. The chip resistor having a low resistance according to claim 1, wherein surfaces of the respective connection terminal electrodes are made substantially flush with a surface of the insulator or project from the surface of the insulator.

3. The chip resistor having a low resistance according to claim 1 or 2, wherein the connection terminal electrodes comprise a metal plating layer.

4. A chip resistor having a low resistance characterized in that a recess is provided in about a middle of a lower surface in a resistor element composed of a metal plate, so that the lower surface of the resistor element has two end portions used as a pair of connection terminal electrodes,

the connection terminal electrodes being formed with a plating layer, and

that an interior of the recess is covered with an insulator.

5. A method of making a chip resistor having a low resistance, comprising:

a step of preparing a metal plate blank formed by a large number of resistor elements, each constituting a single chip resistor, arranged side by side in integrated fashion;

a step of covering at least a lower surface of the metal plate blank with an insulator;

a step of cutting concave grooves constituting recesses in portions of the left and right ends in the resistor elements in the lower surface in the metal plate blank while cutting off portions in the insulator corresponding to the portions of the left and right ends in the resistor elements;

a step of forming a metal plating layer constituting contact terminal electrodes made of metal of lower resistance than the metal plate blank, the plating layer being in the concave grooves in the lower surface in the metal plate blank; and

a step of dividing the metal plate blank into individual resistor elements.

6. A method of making a chip resistor having a low resistance, comprising:

a step of preparing a metal plate blank formed by a large number of resistor elements, each constituting a single chip resistor, arranged side by side in integrated fashion;

a step of cutting concave grooves constituting recesses in about a middle of the resistor elements in a lower surface of the metal plate blank;

a step of covering an interior of the concave grooves in the lower surface of the metal plate blank with an insulator;

a step of forming a plating layer on the lower surface of the metal plate blank; and

a step of dividing the metal plate blank into individual resistor elements.

7. A method of making a chip resistor having a low resistance, comprising:

a step of preparing a metal plate blank formed by a large number of resistor elements, each constituting a single chip resistor, arranged side by side in integrated fashion;

a step of cutting concave grooves constituting recesses in about a middle of the resistor elements in a lower surface of the metal plate blank;

a step of covering an upper surface of the metal plate

blank and an interior of the concave grooves in the lower surface of the metal plate blank with an insulator;

a step of forming a plating layer on the lower surface of the metal plate blank; and

a step of dividing the metal plate blank into individual resistor elements.

CLAIMS

(Amendment under PCT Article 19)

1. A chip resistor having a low resistance characterized in that a recess is provided in a portion at each of left and right ends in a lower surface of a resistor element composed of a metal plate, the recesses each being provided with a connection terminal electrode made of metal of lower resistance than the resistor element, at least a portion between the connection terminal electrodes in the lower surface of the resistor element being covered with an insulator.

2. The chip resistor having a low resistance according to claim 1, wherein surfaces of the respective connection terminal electrodes are made substantially flush with a surface of the insulator or project from the surface of the insulator.

3. The chip resistor having a low resistance according to claim 1 or 2, wherein the connection terminal electrodes comprise a metal plating layer.

4. (amended) A method of making a chip resistor having a low resistance, comprising:

 a step of preparing a metal plate blank formed by a large number of resistor elements, each constituting a

single chip resistor, arranged side by side in integrated fashion;

a step of covering at least a lower surface of the metal plate blank with an insulator;

a step of cutting concave grooves constituting recesses in portions of the left and right ends in the resistor elements in the lower surface in the metal plate blank while cutting off portions in the insulator corresponding to the portions of the left and right ends in the resistor elements;

a step of forming a metal plating layer constituting contact terminal electrodes made of metal of lower resistance than the metal plate blank, the plating layer being in the concave grooves in the lower surface in the metal plate blank; and

a step of dividing the metal plate blank into individual resistor elements.

5. (deleted)

6. (deleted)

7. (deleted)